

Amendment under 37 C.F.R. § 1.111
U.S. Application No. 10/811,386

Attorney Docket No. Q80760

AMENDMENTS TO THE DRAWINGS

Applicant hereby submits new Fig. 7. which shows the case of $\theta=70^\circ$.

Attachment: New Sheet

REMARKS

Status of the Application

Claims 1-5 are the claims that have been examined in the pending in the application.

Claims 1, 2, 4 and 5 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Japanese reference (6-246802) in view of Uehara et al. (U.S. Patent No. 6,228,308). Claim 3 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Japanese reference (6-246802) in view of Uehara et al. (U.S. Patent No. 6,228,308) as applied to claims 1, 2, 4 and 5, and further in view of Taniguchi (U.S. Patent No. 5,002,717).

By this Amendment, Applicants are amending claim 1, and canceling claims 4 and 5 without prejudice or disclaimer. No new matter is added.

Preliminary Matters

Applicants thank the Examiner for acknowledging Applicants' claim to foreign priority and receipt of the certified copy of the priority document submitted May 28, 2004.

Specification Objection

The Examiner has objected to specification for various informalities. Specifically, the Examiner alleges that on page 21 of the specification, in line 2, that "0.4D" should be changed to --D--, as understood from the rest of the specification. Applicant has corrected said informalities, and withdrawal of the objection is hereby respectfully requested.

Drawings Objection

The Examiner has objected to the drawings filed July 21, 2004 under 37 C.F.R. § 1.83(a), as failing to show every feature of the invention specified in the claims. Specifically, the

Examiner alleges that the drawings fail to show angle θ between end faces of the weir plate and the check ring and a vertical axis being set between 70° through 90° as recited in claim 2.

Applicants are hereby submitting new FIG. 7, which shows angle θ to be set at 70° . As such, Applicants respectfully request withdrawal of the objection.

Claim Objections

The Examiner has objected to claim 5 under 37 C.F.R. § 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Specifically, the Examiner alleges that claim 5 is an apparatus claim which does not further recite structure or structural relationships and which only further recites materials to be worked on by the claimed apparatus.

Applicants hereby canceling claim 5 and respectfully request withdrawal of the objection.

Claim Rejection under 35 U.S.C. § 112

On page 4 of the Office Action, claim 2 was rejected as failing to comply with 35 U.S.C. § 112, first paragraph. Specifically, the Examiner alleges that the specification is not enabling for an angle of θ between end faces of the weir plate and the check ring and a horizontal axis of from 70° to through 90° as claimed in claim 2. The Examiner is of the view that reciprocation of the check ring would not close the path width B at an angle θ of 90° because the check ring would never be brought into contact with the weir plate.

Applicants have hereby amended claim 2, as well as the specification, and added new FIG. 7 to address the deficiency noted by the Examiner. Withdrawal of the rejection is hereby respectfully requested.

Claim Rejections under 35 U.S.C. § 103(a)

1). Claims 1, 2, 4 and 5 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Japanese reference (6-246802) in view of Uehara et al. (U.S. Patent No. 6,228,308).

The Examiner asserts that JP 6-246802 discloses all of the elements of claim 1 with the exception of a ratio of length/diameter being set to 18 to 24, a length of a supplying portion being set to 10 to 14 times the diameter, a groove depth of the supplying portion of the screw being set to be not less than 13 mm, or a groove depth of a measuring portion of the screw being set to be not less than 8 mm. However, the Examiner further asserts that Uehara discloses the relationships that JP 6-246802 fails to disclose. As discussed below, Applicant submits that JP 06-246802 and Uehara are deficient at least with respect to the subject matter of claim 1, as amended.

JP 06-246802 fails to disclose a specified width of the check ring. However, the Examiner is basing the rejection on the fact that such a limitation would still enable the check ring to function as a valve. Applicants respectfully disagree. As noted in the specification, a width smaller than 0.3 times the diameter would not function as a seal and anything larger than 0.4 times the diameter would interfere with the screw. Therefore, the width of the check ring is not simply a design choice, but is integral to the working of the claimed invention. Therefore, claim 1, as amended, is patentable over the applied art as the references, taken individually or in conjunction with one another, fail to teach or suggest this limitation of amended claim 1.

Claim 2 is patentable at least by virtue of its dependency from claim 1.

2) Claim 3 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Japanese reference (6-246802) in view of Uehara et al. (U.S. Patent No. 6,228,308) as applied to claims 1, 2, 4 and 5, and further in view of Taniguchi (U.S. Patent No. 5,002,717).

Claim 3 depends on claim 1. As noted above, JP 06-246802 and Uehara fail to teach or suggest all of the elements of amended claim 1. Because Taniguchi fails to cure the defects noted in JP 06-246802 and Uehara, claim 3 should be patentable at least by virtue of its dependency.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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Date: July 5, 2006